# *BRACHYCARENUS TIGRINUS* (SCHILLING) (HEMIPTERA: RHOPALIDAE) NEW TO BRITAIN

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## ABSTRACT

The rhopalid bug *Brachycarenus tigrinus* is reported new to Britain, from two specimens found in London's Battersea Park in July 2003. The bug is described and illustrated and a short key to the British genera of Rhopalidae is given. The recent increase and spread of several related rhopalids is discussed.

## INTRODUCTION

Several rhopalid bugs were found by sweeping and by using a suction sampler in Battersea Park (TQ280772), Surrey (VC17), 28.vii.2003. The site was an area of newly seeded grass that had failed because of the long dry summer. It was intended that this area should not be mowed, to allow long grass growth. This was part of a project comparing the faunas of short mown lawn and long grass areas managed by 'hay meadow' cutting regimes. But the grass had sprouted, then died and the site had grown up with a sparse straggling growth of annual weeds such as melilot, mayweed, mugwort and Guernsey fleabane, amidst many areas of bare sandy ground. When examined later, the rhopalids proved to be: *Liorhyssus hyalinus* (Fabricius), a recent colonist to Britain after being considered a rare migratory vagrant (Southwood & Leston, 1959; Hawkins, 2003); *Rhopalus subrufus* (Gmelin), typically a species of disturbed ground; *Stictopleurus abutilon* (Rossi), a recent recolonizer in Britain after being thought extinct (Southwood & Leston; 1959, Kirby, 1992) and *Brachycarenus tigrinus* (Schilling) an insect new to Britain.

*Brachycarenus tigrinus* is a pretty rhopalid leafbug (Fig. 1a), known throughout most of Europe from North Africa, Spain and the Mediterranean to the southern tip of Scandinavia, into southern Russia and the Middle East, Central Asia, Mongolia and Korea. It has also been introduced into the USA. It has been expanding its range in Europe (Moulet, 1995) and its possible arrival in the UK was commented on by Hawkins (2003).

*Brachycarenus* can be distinguished from other genera in the family by virtue of its short triangular head, only partially divided metapleuron (the thoracic plate above the hind legs, easily visible in side view) and its pale straw yellow colour speckled with black marks (Fig. 1a). The following key to the British genera of Rhopalidae, is adapted from that given by Moulet (1995).

## KEY TO THE BRITISH GENERA OF RHOPALIDAE

1 Head elongate, eyes less globular; delicate, narrow and elongate species . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . *Chorosoma, Myrmus*
– Head more or less triangular (e.g. Figs. 1a,b); eyes strongly globular, broader and stouter species . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 2
2 Strongly coloured black and red (or orange); corium sclerotized between the nerves . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . *Corizus*
– Coloured otherwise; corium transparent between the nerves . . . . . . . . . . . 3

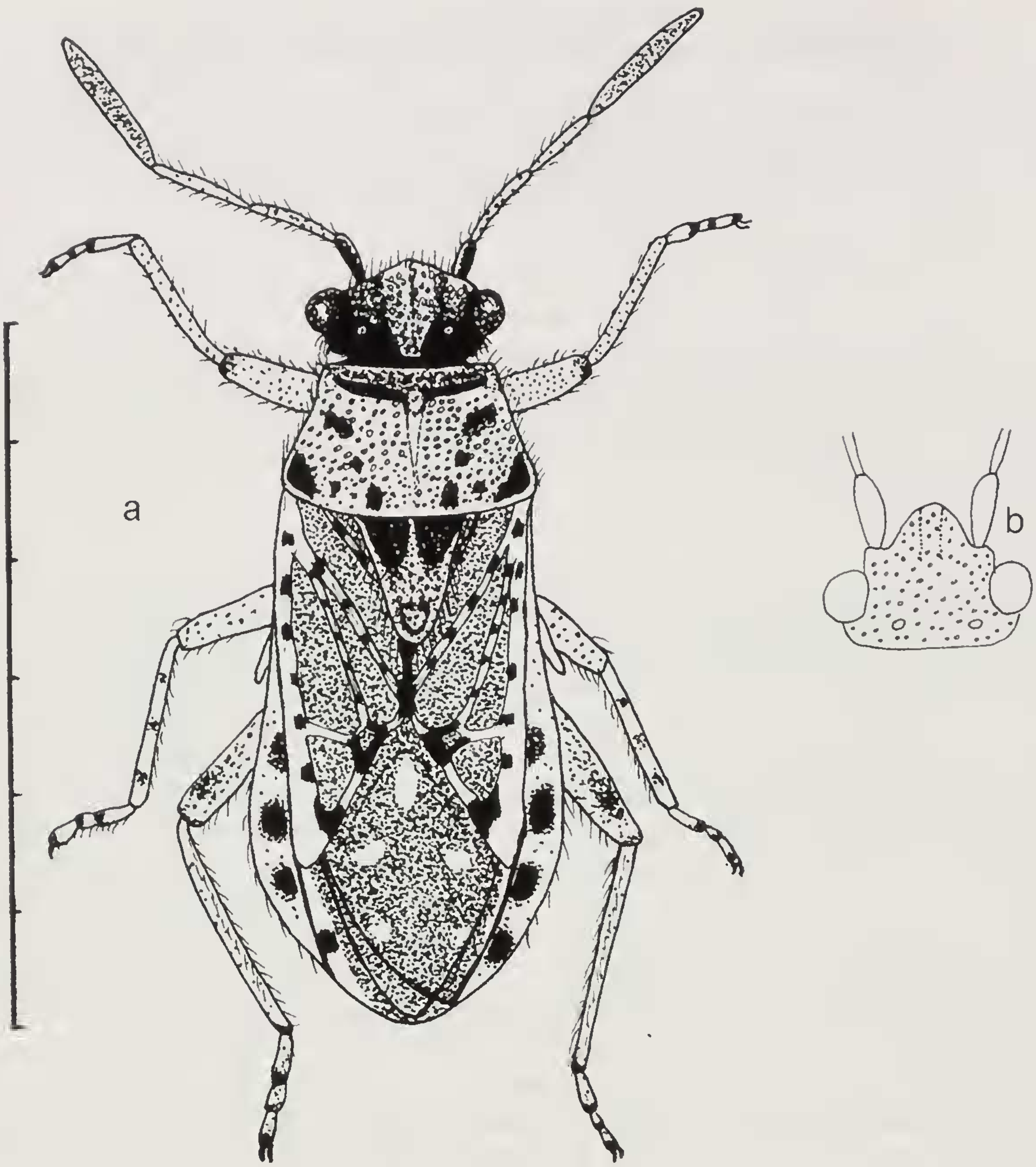



Fig. 1. (a) *Brachycarenus tigrinus* (Schilling), the slightly more dark-marked of the two specimens from Battersea Park. The other specimen had the connexivum clear yellow, without the black marks on each abdominal segment. (b) Head of *Rhopalus subrufus*. Scale rule is in millimetres.

3 Metapleuron more or less quadrangular, hind margin weakly convex not obviously divided by a groove, coarsely punctured throughout (Fig. 2a) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . *Stictopleurus*

– Metapleuron not quadrangular, hind margin strongly sinuate, more or less divided by a groove, coarsely punctured in front, finely punctured behind (Figs 2b & 2c) or hardly punctured at all (Fig. 2d) . . . . . . . . . . . . . . . . . . . . . . 4

4 Metapleuron divided by a distinct groove (Fig. 2b). Membrane usually extending well beyond the end of the abdomen . . . . . . . . . . . . . . *Liorhyssus*

– Metapleuron indistinctly divided (Figs 2c & 2d). Membrane usually reaching just to the end of the abdomen . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 5

5 Head short (Fig. 1a), antennal tubercles not prominent, colour straw yellow, marked with black . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . *Brachycarenus*

– Head long (Fig. 1b), antennal tubercles prominent, colour brown, red, or orange sometimes speckled or punctured with black . . . . . . . . . . . . . . . . *Rhopalus*

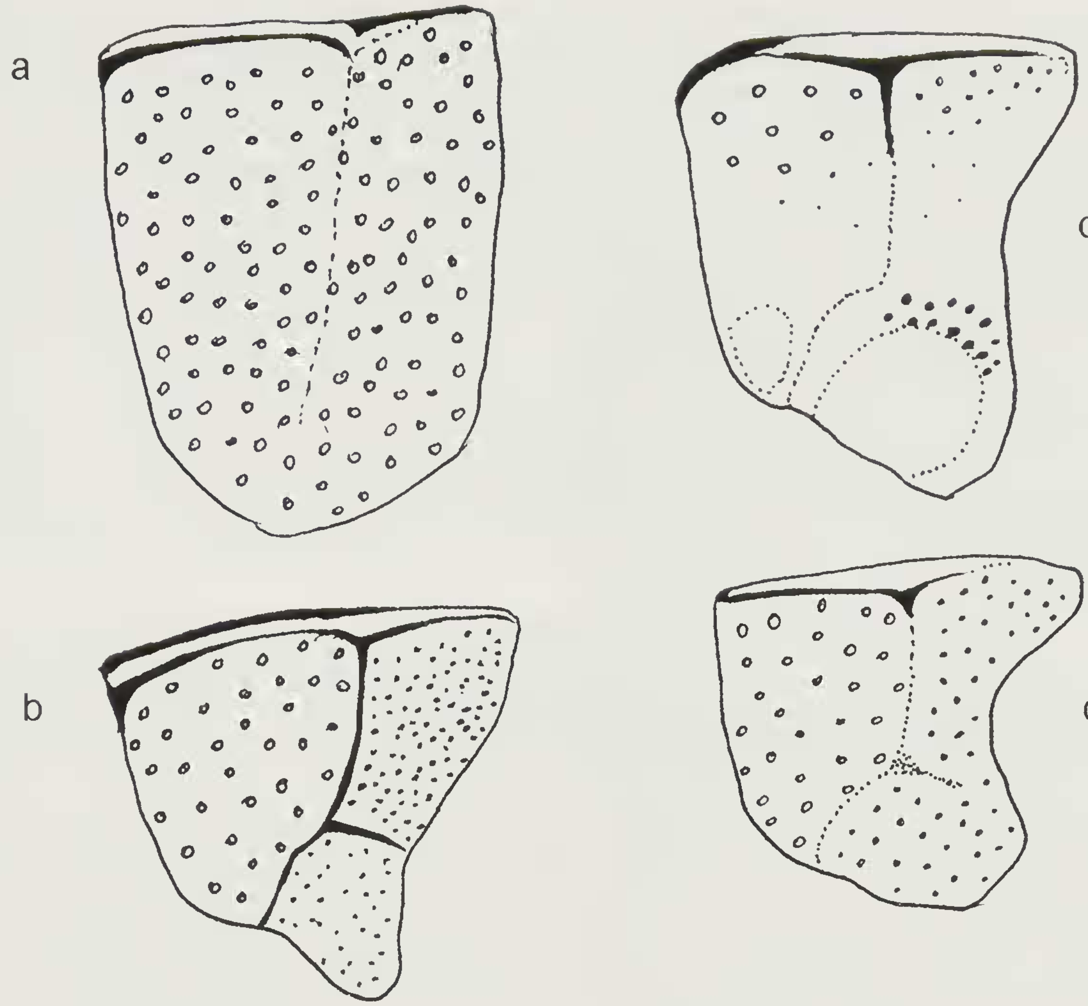



Fig. 2. Metapleuron (the thoracic plate above the hind legs, easily visible in side view) of (a) *Stictopleurus punctatonervosus*, (b) *Liorhyssus hyalinus*, (c) *Brachycarenus tigrinus* and (d) *Rhopalus subrufus*.

Only one species of *Brachycarenus* is known in Europe, *Brachycarenus tigrinus* (Schilling, 1829). The genus *Brachycarenus* was raised by Fieber in 1861 to separate *tigrinus* from other species of *Rhopalus* in which genus it was originally described. And although some authors (e.g. Göllner-Schneiding, 1978) continue to treat *Brachycarenus* as a subgenus, I have followed Moulet (1995) in giving it full generic status; it will be given full generic status in the forthcoming catalogue of Palaearctic Hemiptera (W.R. Dolling, pers. comm.).

## Description

Size 6.5–7.0 mm, of typical rhopalid form, subparallel, legs and antennae moderately long. General ground-colour pale straw yellow marked with black specks. Head, pronotum and scutellum shining and strongly punctured. Head broadly triangular with ocelli prominent and pale against a broad black band adjacent to each eye and with a pale area in front of each. Face and frons with prominent erect pale pubescence. Antennae mostly shining, straw coloured, basal segment with a black streak above, segments 2–3 with some black speckles; segment 4 dull uniform greyish yellow, about eight times as long as broad.

Pronotum trapezoidal about one and a half times as broad as long, strongly punctured and with sparse, but distinct, erect pale pubescence; a transverse trough-

like shallow groove just behind the front margin marked by a dark line, interrupted at centre by a yellow 'bridge'. Pronotum with a slightly raised central line, at least in anterior half; several dark speckle marks on disc and near hind angles. Scutellum pale straw-coloured, slightly raised at apex, with two black marks at the base on each side extending for between one-third and one-half the length; erect pubescence clearly visible. Dark abdomen visible through the transparent cells of the corium and the membrane, but with about five distinct pale spots; the connexivum pale, or marked with black spots at the hind corner of each visible segment. Veins of the forewings pale straw, but marked with prominent black speckles throughout. Erect pale setae visible on all veins.

Legs pale straw yellow, speckled with black marks throughout and usually with a vague cloud at apex of hind femur. Tarsi with each individual segment pale at base, but darkened at apex; claws black. Underside of body more uniformly pale straw-coloured than the upper surface and with no, or only a very few, black speckle marks.

## Discussion

Several rhopalid bugs have appeared or reappeared in Britain in the last few years. At the time of the review of scarce and threatened bugs (Kirby, 1992), both *Stictopleurus abutilon* and *S. punctatonervosus* (Goeze) were considered to be 'extinct' in Britain. *Stictopleurus abutilon* had last been taken at Ashtead in Surrey in 1948. *Stictopleurus punctatonervosus* had last been recorded at Charlwood in Surrey in 1870. However, in 1996, *S. abutilon* was found in several localities in south-east England (Denton, 1997; Kirby, 1997; Nau, 1997). *Stictopleurus punctatonervosus* was rediscovered in Britain in three Essex localities (Bowdrey, 1999). The two species have been found in most subsequent years, sometimes together (e.g. Jones, 2000a) and sometimes in large numbers (e.g. Jones, 2004). The frequent occurrence of nymphs with the adults confirms that these species are now well established and breeding in Britain.

*Liorhyssus hyalinus* has also been recorded several times recently (e.g. Hodge, 2002, 2004; Nau, 2004), suggesting that it too is established and breeding here. The specimen of *Liorhyssus* from Battersea Park at first appeared damaged, its left forewing being broken off; however under the microscope it was obvious that the wing was not broken but was twisted and stunted. Rather than having been damaged on capture or before, the wing was actually malformed, indicating that the specimen had bred here and that it had suffered some unknown trauma on its final moult to adulthood.

In his recent book on the shieldbugs of Surrey and related families including Rhopalidae, Hawkins (2003) mentions *B. tigrinus* in passing, along with *L. hyalinus*, commenting that it was spreading through Europe, but had not yet been discovered here.

It is tempting to conjecture how and why these rhopalids are arriving in Britain now. It may be something to do with the fact that rhopalids tend to favour warm, well-drained and sunny places, and that Britain has recently experienced a series of hot dry sunny summers and mild winters. Both species of *Stictopleurus* have been turning up on typical 'brownfield' sites in urban London, sites usually with sparse vegetation and areas of well-drained bare soil. Such brownfield sites are known to favour many warmth-loving insects, usually those with a more or less Mediterranean distribution in Europe, and which are right on the edge of their northern or western range here in Britain. Other typically warm-loving bugs that regularly turn up on such sites are the lygaeids *Nysius senecionis* (Schilling) and *Metapoplax ditomoides* (Costa). Both have appeared in Britain in the last few years and become well

established here. Both species were found in abundance at the dry site in Battersea Park.

Kirby *et al.* (2001) comment on the expanding British and European distributions of various bugs (including *Liorhyssus* and the two *Stictopleurus* species). They suggest that one of the most compelling reasons for some of the range expansion is climatic, since there has recently been a significant and widespread increase in warmth-loving species, both long-established residents and newly discovered species.

Battersea Park has recently yielded several other insects new to Britain including the picture-winged tephritid fly *Rhagoletis meigenii* (Loew) (Jones, 2000b) and the African ichneumon *Ctenochares bicolorus* (Linnaeus) (Jones, 2001).

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